

Silicon Microchannel Plate Large Area UV Detector, Phase II

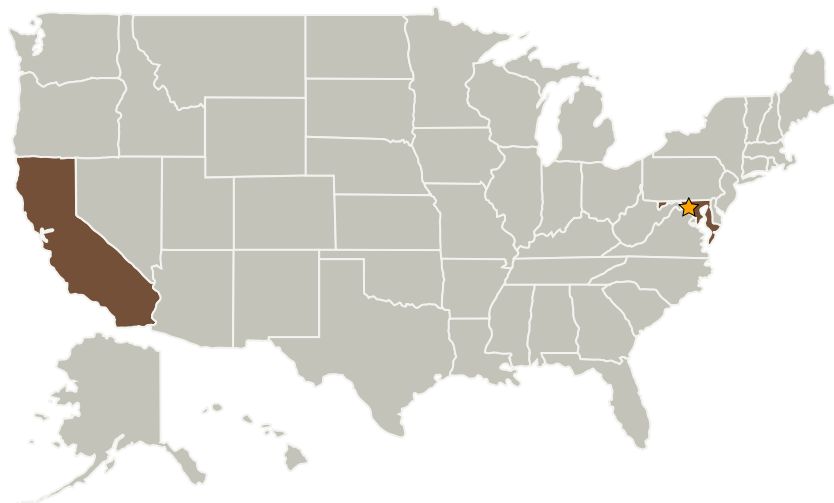
Completed Technology Project (2008 - 2010)



Project Introduction

To address the NASA need for high-quantum-efficiency, high-resolution, low-cost photodetectors for the far-UV spectral range, Physical Optics Corporation (POC) proposes to develop a new Silicon Microchannel Plate-based Large Area UV detector (UV-Si-MCP) with a highly efficient, negative electron affinity (NEA), solar-blind AlGaIn photocathode fabricated directly on the surface of a silicon-based microchannel substrate. In Phase I, POC demonstrated the feasibility of fabrication of the AlGaIn photocathode on the MCP structure, and developed the technology for fabrication of the entire device that meets NASA specifications for the area of sensitivity, quantum efficiency, and spatial resolution. In Phase II, POC will develop a fully functional prototype with a large number of channels and high quantum efficiency, assembled with NASA active pixel readout electronics. This efficient and radiation-hard UV photodetector with low background noise will offer NASA capabilities to improve sensitivity and spatial or spectral resolution of UV instruments for several missions devoted to a better understanding of the origin of the universe and its evolution to modern form.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
Physical Optics Corporation	Supporting Organization	Industry	Torrance, California

Primary U.S. Work Locations	
California	Maryland

Project Transitions

**December 2008:** Project Start**December 2010:** Closed out

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.1 Remote Sensing Instruments/Sensors
 - └ TX08.1.1 Detectors and Focal Planes